The Flying Wire

Chapter 124
Experimental Aircraft Association

Volume 52 Number 3
March 6, 2013

Board Meeting - 5:30 pm

Dinner – 6:15 pm

General Meeting – 7:00 pm

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www.EAA124.org

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EAA Chapter 124
5550 Windsor Road
Windsor, CA 95492

March 6, 2013 Program

Dynon Avionics

Our March presentation will be from Dynon Avionics. Kirk Kleinholz, Sales Account Manager for Dynon in Washington State, will fly in for a presentation on the types of instrumentation in the company's current offering. Join us for an informative presentation about this popular avionics line.

Events Calendar

Please send us info about upcoming events!

We want to keep everyone informed about local and regional events, so send us information if it comes your way!

Bob Gutteridge: bob_gutteridge@pacbell.net
John Palmerlee: jbpalm@sonic.net

Upcoming Events

March 23-24: SportAir Workshops at Watsonville, CA, Click Here

April 26-27: CAFE Electric Aircraft Symposium VII, Flamingo Hotel, Santa Rosa. Click Here for more info.

May 4: Chapter 124 Young Eagles Flights at Cloverdale Airport open house (listed as May 11 in error last month)

May 6-24: SLSA/ELSA Repairman Maintenance Course. Corning Muni Airport (0O4), CA

May 13-16: "Aluminum Overcast" B-17 at Ukiah Airport on display and giving rides. Hosted by the Willits EAA Chapter 1027. Contact Paul Trexel eaglenestnorth@juno.com

Saturdays – 12 to 1:30pm BBQ at Sonoma Skypark Chapter 1268
First Thursday each month – 11:30 to 1:30 - *Hot Dog Thursday* at Pacific Coast Air Museum

Assembling the Mighty Eighth

Editor's Note:This is a first hand account of flying bombers out of England in WWII, submitted by a friend of Bob Gutteridge. Thanks, Bob!

By Leslie A. Lennox,
Lt./Col. USAF(ret)

Of all the stories that have been written, and movies that have been shown, about the 8th Air Force, very little attention has been given to what was involved in assembling 1200 B-17's and B-24's each day, to get them in formation to carry out a strike against Germany. Certainly showing bombers under attack by fighters, or encountering heavy flak, was a reality, and are interesting to watch. Also, stories about some of the rougher missions make interesting reading. But what was going on over England, each morning, could get just as scary to the crews as the time spent over some of the targets. The planning, and coordination, that had to be accomplished during the night, by the operations planners of each Group, so that the crews could be briefed, was unbelievable. If the planners had failed to do their jobs properly, there would have been a free for all among Bomb Groups, in the skies over England. The rendezvous points, altitude, and times had to be precise, and known by all of the crews, before the Eighth Air Force could get in formation. The success of the planners, in accomplishing their mission, enabled the Eighth Air Force to become the most powerful air armada ever assembled. In my view, how this was accomplished is one of the major untold stories of the war.

I was a pilot in the 95th Bomb Group, in late 1944 and early 1945, and what follows is a typical mission, as I remember it, from a crew member's perspective.

Early in the evening, our Squadron Operations would post the names of the crews that were scheduled to fly the following day. There were two ways we could be notified if the Group had been alerted to fly. One was by means of lights on the front of the orderly room, and the other with raising of colored flags. If a green light was on, the Group was alerted, if a red light was on we would fly, and if a white light was on, the Group would stand down. The light was monitored frequently throughout the evening to learn our status and, normally, we would know before going to bed if we would be flying the next day.

On the morning of a mission, the CQ (charge of quarters) would awaken the crews about four or five o'clock, depending on takeoff time. The questions we always asked were, "What is the fuel load?" and, "What is the bomb load?" If his answer was," full Tokyo tanks," we knew we would be going deep into Germany. Shortly after being awakened, "6-by" trucks would start shuttling us to the mess hall. We always had all the fresh eggs we could eat, when flying a mission. After breakfast, the trucks carried us to the briefing room. All of the crew members attended the main briefing, and then the Navigators, Bombardiers and Radio operators went to a specialized briefing. At the main briefing, in addition to the target information--anti-aircraft guns, fighter escort and route in--we received a sheet showing our location in the formation, the call signs for the day and all the information we would need to assemble our Group and get into the bomber stream.

After briefing, we got into our flight gear, drew our parachutes and loaded onto the trucks for a ride to our plane. We were now guided by the time on our daily briefing sheet. We started engines at a given time and watched for the airplane we would be flying in formation with to taxi past, then we would taxi behind him. We were following strict radio silence.

We were now parked, nose to tail around the perimeter, on both sides of the active runway, and extremely vulnerable to a fighter strafing attack. At the designated takeoff time, a green flare would be fired and takeoff would begin. Every thirty seconds an airplane started takeoff roll. We were lined up on the perimeter so that the 12 airplanes of the high squadron would take off first, followed by the lead and then the low squadron.

Each Group had a pattern for the airplanes to fly during climb to assembly altitude. Some would fly a triangle, some a rectangle and our Group flew a circle, using a "Buncher" (a low frequency radio station) which was located on our station. The patterns for each Group fit together like a jig saw puzzle. Unfortunately, strong winds aloft would destroy the integrity of the patterns, and there would be considerable over running of each other's patterns.

Many of our takeoffs were made before daylight, during the winter of '44 and '45, when I was there, so it was not uncommon to climb through several thousand feet of cloud overcast. Also it was not uncommon to experience one or two near misses while climbing through the clouds, although you would never see the other airplane. You knew you had just had a near miss, when suddenly the airplane would shake violently as it hit the prop wash of another plane. It was a wonderful feeling to break out on top, so you could watch for other planes, to keep from running into each other. To add to the congestion we were creating, the Royal Air Force Lancasters, Halifaxes, and Wimpys would be returning from their night missions, and flying through our formations. Needless to say, pilots had to keep their heads on a swivel and their eyes out of the cockpit.

After take off, the squadron lead would fire a flare every 30 seconds, so that we could keep him located and enable us to get into formation quicker. The color of our Group flare was red-green. The first thing you would see, when breaking out of the clouds, was a sky filled with pyrotechnics, so you had to search the sky for the Group flare, which would identify the lead airplane of your Squadron. Once you had it located, you could adjust your pattern to climb more quickly into formation with him. As each airplane pulled into formation, they would also fire a flare, with the lead plane, making it much easier for the following aircraft to keep him in sight. I think most crew members would probably agree that the pyrotechnic show, in the skies over England, in the morning when the Eighth was assembling, was a rare sight to behold.

The order of progression for assembling the Eighth Air Force was to first assemble the Flight elements, the Squadrons, the Groups ,the Combat wings, the Divisions and, finally, the Air Force.

As soon as the four Squadron elements were formed, the high, low and second elements would take up their positions on the lead element, to form a Squadron. When the three Squadrons had completed assembly, it was necessary to get into Group formation. This was accomplished by having the three Squadrons arrive over a pre-selected fix at a precise time and heading. The high and low Squadrons were separated from the lead Squadron by 1000 feet and, after getting into Group formation, they would maintain their positions by following the lead Squadron.

Then it was necessary to get into the Combat Wing formation. We were in the 13th Combat Wing, which consisted of three Bomb Groups: the 95th, the 100th and the 390th . Whichever Group was leading the Wing that day, would arrive over a pre-selected point, at a precise time and heading. Thirty seconds later, the second Group would pass that fix, followed by the third Group, thirty seconds later. We were then in Combat Wing formation. The navigators in the lead airplanes had a tremendous responsibility, to ensure that the rendezvous times were strictly adhered to.

There were three Divisions in the Eighth, the 1st, 2nd and 3rd. The 1st and 3rd Divisions consisted of B-17s only, and the 2nd Division was B-24s. The B-24s were faster than the B-17s, but the B-17s could fly higher, therefore, the two were not compatible in formation. As a result the 1st and 3rd Divisions would fly together

and the 2nd Division would fly separately.

Now that the Groups were flying in Combat Wing formation, it was necessary to assemble the Divisions. This was usually accomplished at the "coast out"--a city on the coast, selected as the departure point "fix." The Group leader in each Combat Wing knew his assigned position in the Division, and the precise time that he should arrive at the coast out departure point, to assume that position in the Division formation. The lead Group in the Division, which had been selected to lead the Eighth on the mission, would be first over the departure fix. Thirty seconds after the last Group in the first Wing passed that point, the second Wing would fall in trail, and so on, until all Combat Wings were flying in trail and the Division would be formed. One minute later, the lead Group in the other Division would fly over that point, and the Combat Wings in that Division would follow the same procedure to get into formation. When all of its Combat Wings were in trail, the Eighth Air Force B-17 strike force was formed and on its way to the target. At the same time the 2nd Division B-24s were assembling in a similar manner and also departing to their target.

Meanwhile, as the bombers were assembling for their mission, pilots from the Fighter Groups were being briefed on their day's mission. Normally, 600 to 800 P-38's, P-47's, and P-51's would accompany the bombers to provide protection against enemy fighter attacks. Fighter cover was not needed by the bombers until they were penetrating enemy territory, therefore to help conserve fuel. fighter takeoffs were planned to give them enough time to quickly assemble after takeoff, and climb on course up the bomber stream to the groups they would be covering. The combined strength of the fighters and bombers brought the total number of aircraft participating in a mission to approximately two thousand.

A major problem that presented itself, on each mission, was that the bomber stream was getting too stretched out. It was not uncommon for the headlines in stateside newspapers--in trying to show the strength of our Air Force--to state that the first Group of bombers was bombing Berlin, while the last Group was still over the English Channel. It made great headlines but was a very undesirable situation. It meant that the Groups were out of position, and not keeping the proper separation. Furthermore, it was almost impossible for them to catch up and get back into the desired formation. This made the entire bomber stream more vulnerable to fighter attacks.

Finally, our planners figured out what we were doing wrong. When the first Group departed the coast out fix, it started its climb to what would be the bombing altitude. Then, as each succeeding Group departed that fix, it, too, would start climbing. The problem with this procedure was that, as soon as the first Group started its climb, its true airspeed would start to increase, and it would encounter different wind velocities. Now it would start to pull away from the Group in back of it, and the "stretchout" of the bomber stream would begin. By the time the last Group had reached the coast out, to start its climb, the first Group would be leveled off, with a true airspeed approaching 250 miles per hour, and the bomber stream would be really stretching out.

The solution to this problem that had been frustrating the Bomber crews for so long was pretty simple. We would no longer start climbing at the coast out, but instead, at a designated time, all Groups would start climbing, irrespective of position. This meant that we all would have similar true airspeeds and would be influenced by the same winds aloft. That took care of the problem. It was still possible for a Group to be out of position, because of poor timing, but the entire bomber stream wouldn't get all stretched out.

When you consider the way our Air Traffic Control system operates today, and all the facilities at their disposal to guide each individual airplane through the sky to ensure its safety, it's almost unbelievable that we were able to do what we did. To think of launching hundreds of airplanes, in a small airspace, many times in total darkness, loaded with bombs, with complete radio silence, and no control from the ground, and do it successfully day after day, with young air crews, with minimum experience, is absolutely mind boggling.

The accomplishments of the Eighth Air Force have been and will be reviewed by historians from World War II on. There never will be another air armada to compare to it. I feel confident that they will never cease to be amazed by our ability to assemble hundreds of heavy Bombers, under the conditions we were confronting, into the devastating strike force we now fondly refer to as, "The Mighty Eighth."

Chapter Facilities Notes (thanks, Larry!)

The following are important notes from Larry Rengstorf, our Facilities Chairman. Please take action where indicated.

1. All EAA Gate AOA card holders - Please email or call in your new AOA badge number and the expiration date to me as soon as you get the new badge. I have to maintain the list per TSA.

2. Any EAA 124 tenants that have personal items in any of the lockers or Bins in the Shade hangar - please Write your name on the bin beside the hasp/lock. We need lockers/bins for aircraft owners and all seem to be locked - I know some are just from persons that have left the site. We need them. And are going to cut the lock off if it is not marked legibly with your name on it. If we cut your lock by mistake - I have a new lock for you - sorry.

3. Any personal items stored in the Shade hangar needs to be under or in the immediate vicinity of your plane. There are a few items that have been there for too many years and need to be claimed by you, or we will dispose of the items.

4. The club has the High Weed Mower (Bechtold Gas driven) that seems to be excess to our needs, and will gladly sell it to anyone that can use it - I figure it is worth at least $150 - $175 or make a reasonable offer.

5 The club has about 4 rolls of clear plastic/mylar 5 ft wide x 1000 ft or so - If anyone has a use for this for coverings, to cover those wings that are waiting for the rest of the project to be finished, or??? please let me know I will make you a deal you cannot refuse. One roll; or all. Just ask.

Fly Mart

For Sale: (3-13) AirTech Fuel Cap Tool. This high tech tool helps pilots open many types of aircraft fuel caps, doors and latches. Contact Ryan Beck, ryan.beck1@yahoo.com for information.

For Sale: (2-13) Jeff Rose electronic ignition system for six cylinder aircraft engine. Never used, new in 1998. Complete with Plugs, wiring and all tech data. $100. Call CJ @ 799-2878

For Sale: Satellite Phone: (12-12) Iridium 9500 Satellite Phone with 2 batteries, 12v and 120v chargers, case, accessory pouch, reference card and deactivated SIMM card. $400. Contact Bob, 707-483-1985

For Sale: Taylor Titch project: (11-12) $2,500/best offer. 60% complete by master craftsman. Covered in fabric silver painting nearly complete. The wings were damaged in two places during a move, Click Here for pictures. Free delivery in the greater Bay Area. Contact Jenny Hayden 415-308-5944 or ejennyhayden@gmail.com. Project is located at South County Airport, San Martin.

For Sale: (9-12) Corbin Baby Ace N5233: $8,750. Built by John Lunsford in 1978-9, registered as a Lunsford Baby Ace ELSA. Engine: A-75-8 1418 SMOH. Runs Smooth. Bendix Mags. New oil temp gauge, new 600-6 tires, June '12 annual at Jet Center. March '12 recovery with Stewarts. Hand starts easy. Selling Ace in favor of Ercoupe. Hangar 254 Gun Club. Email stephen@pizzo.com 707-829-7038.

Help Wanted: (6-12) Building a discontinued Falcon 80% build kit, complete. Seeking experienced Falcon Builders for support. Raymond Hillcrest (707)-963-9281. Angwin Airport.

For Sale: (4-12) RV 6 kit and engine $25,000. Fuselage is a factory built Quick build. All wings, empennage, control surfaces and some other items are built. Engine was removed from a certified plane in Santa Rosa due to airframe corrosion. The engine is a O320 A2B Lycon rebuild with 250 hours. Has all airframe kit parts except finishing kit. Steve Barnes (707) 972-3582

Wing Rack: (2-12) Free to anyone who can use it. Built for an RV-9A wing, but should work for other RVs or perhaps other wings as well. Call John Swanstrom 758-9017 or Email John at: john_swanstrom@agilent.com

For Sale: RV6A - Half partnership available. See it Here. Call Chris Wallner at **364-1195**

For Sale: Partially Built Spacewalker 2 project (1930's open cocpit trainer replica). Wings complete less covering, Fuselage factory welded. No Motor. Must See! Call Ted Baggett: **823-5325**

For Sale: Easy Eagle project – Airframe and 3 out of 4 wings are finished, with accessories: wheels, brakes, VW adapter, starter (and more). Price Negotiable. Fuselage Picture Here. See Great Plains Site for more info. Call Bob Ferguson: **539-5665**

For Sale: Matco Parking Brake model PV-1 plus adapters. Never used. David Lynch **578-2087**

For Sale: 1946 Aeronca 11AC Chief in very good condition. Light sport, fun flyer! Mode C exempt. Contact Kirk Wilder at **895-2949**. Flyer at the following link: Aeronca Chief Flyer

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News/Notes From the Editor...

Royal Petroleum – Cost Break for EAA 124 Members

As noted by Bob Gutteridge at the February 2013 meeting, Royal Petroleum has offered Chapter 124 members a discount on aviation oil. They are located at 365 Todd Road, approximately half a mile west of Hwy 101. Their number is 707-544-8324

New Piper AD 2013-02-13

New AD issued applies to select models of Piper PA-28, 32, 34, and 44 aircraft. This new AD covers control cable assembly failure. Click Here for the PDF text.

Jabiru Engine Valve failure (thanks, Brien)

A Williamsburg pilot experienced engine roughness that brought him back to the airport during a flight over the James River. The engine failed after reducing power for landing, but the pilot made an uneventful landing. The exhaust valve is suspected of being defective – it broke and opened up the intake system to crankcase vapors. The engine was quite new. Here is a picture submitted along with the news.

EAA Chapter 124 Dues (last chance for the roster)

Pay at the March 6 meeting to place your name in the 2013 Roster. See Treasurer John Whitehouse.

CAFE Electric Aircraft Symposium VII – April 26-27, 2013

Remember that EAA members get a very special rate of $185 (50% discount). This is an awesome event. Take the following link to register with this rate: CAFE EAS VII

Interesting Aviation Links (Donna T, Bob G, Larry R, Wayne C, Mike T, Brien S, Tim P, Gail V)

Electric Ultralight – Click Here

Around the World Flight Adventure - Click Here
SR-71 Model Flight Click Here
Naked eye comet March 12-24 – Click Here
Rough Sea carrier landings – Click Here Click Here2
Rossy Glider School - Click Here
Hawker Flight In-Cockpit – Click Here
Blue Angels Video – Click Here
10,000 ton Meteor explodes over Russia – Click Here
Amazing woman pilot learned to fly even though she was born without arms – Click here

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Trivia – Guess What's in the Box?

On February 23, Bob Ferguson sent me this interesting picture, and suggested I ask the Chapter 124 membership if they think it's safe to open these long boxes he found in his garage. The look on his face makes me think it's serious business.

Each box weighs about 200 pounds. Will someone at the March meeting please help Bob out and let him know what kind of project he's up against?

Wing Tips

Grinding Metals

One reason to exercise caution when using grinders to shape metal parts arises from the possibility that the grinding wheel could shatter at high RPM. Metal shop instructors may have told us not to grind non-ferrous metals on the bench grinder, but do we always follow this warning? Probably not, and particularly when using a grinder shared by many builders, a degree of awareness and caution is warranted.

When grinding non-ferrous metals (typically aluminum), some of the ablated material is thrown away from the wheel, but some becomes embedded in the pores of the grinding wheel. This material can develop an internal pressure in the wheel, and as the packed in aluminum particles expand with heat, this pressure can increase to the point of fracturing the grinding wheel. Few face shields or goggles could withstand the impact of massive fragments like this, as can easily be imagined.

To avoid this situation, examine the wheel before grinding, and dress the wheel (removing a surface layer with a special tool or stone) before grinding if you see embedded metal or dirt particles, or if the wheel is misshapen or imbalanced during operation. Here's a YouTube video covering the dressing process: Click Here

Spark Testing of Materials

Different ferrous metals demonstrate different spark patterns based on their composition. Sometimes a material shows up and you need to know what it is, and clues can be gained from the sparks it emits against a grinding wheel. Hardness is not indicated by the spark pattern, only the alloy composition.

Here is a site with more info on the subject, and some good pictures for reference. Click Here

Sheet Aluminum

Everyone probably knows this, but it's good to mention it just in case. Alclad aircraft aluminum is not pure aluminum. It has a very thin layer of pure aluminum on the surface to minimize skin corrosion. Pure aluminum may oxidize on the surface, but the oxide layer halts further action. The interior is an aluminum/copper/zinc alloy – a set of metals just waiting for moisture to turn the mixture

into a battery – and corrosion can consume the interior.

For this reason, sanding the surface of Alclad is forbidden, but the Alclad can also be removed with Scotchbrite or even buffing compounds applied regularly to bare skin.

Chemical etching solutions are best for removing corrosion prior to painting and can be applied and removed without abrasives.

Steam cleaning Aluminum skin should be avoided because it can cause damage from heat warping and may alter the heat treatment of aluminum alloys.

EAA Chapter 124 Board Meeting Minutes

February 6, 2013 (Austin Rennard, Secretary)

Called to order 5:37pm Wayne Cook

Attendance: Wayne Cook, Mike Tovani, John Whitehouse, Austin Rennard, Ray Shipway, Mark Tuma, Frank Higdon, Jim DuVander, Larry Rengstorf, Tim Peterson, Jason Wildman

Facilities: Larry picked up some aircraft parts which are up for grabs, anybody who is interested. Also, weeds need to get sprayed.

We took a draw for programs for 2013

Saturday fly-ins suggested to bring in people from other chapters who can not make it to our normal Wednesday meetings.

Potential Young Eagles Day May 4th, 2013 Cloverdale

Wayne Cook will bring his Kit Fox and keep in the hangar with the wings folded for a temporary time until a better place for it comes along.

Adjourned 6:26pm Wayne Cook.

EAA Chapter 124 General Meeting Minutes

February 6, 2013 (Austin Rennard, Secretary)

Called to order 7:10pm Wayne Cook

Thank you Liz for the wonderful dinner!

Welcome guests to EAA 124.

Minutes approved for January 2013

If you need a sign off for displaying your aircraft to give to the county for tax breaks, talk to Larry Rengstorf.

Larry R. has extra aircraft parts, talk to him if you are interested.

Next Electric Aircraft Symposium in April. Go to Cafe's website for more information.

Cloverdale Fly-In and Young Eagles event May 4th, 2013

John Swanstrom flew his RV9a for the first time after a 3 year build.

Adjourned 7:51pm Wayne Cook

No flying machine will ever fly from New York to Paris ... [because] no known motor can run at the requisite speed for four days without stopping.

If we worked on the assumption that what is accepted as true really is true, then there would be little hope for advance.

--- Orville Wright

Chapter 124 Contact Information

President:	Wayne Cook (13/14)	(707) 217-4439
Vice President:	Mike Tovani (12/13)	(707) 321-2740
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	Mark Tuma (12/13)	(707) 953-2403
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	Tim Peterson (12/13)	(707) 538-8860
	Jim Duvander (13/14)	(707) 838-2174
Facilities Chairman:	Larry Rengstorf (12/13)	(707) 575-0331

Facilities Committee:

Dwayne Green, Dale Wittman, Jim Long

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EAA Chapter 124
5550 Windsor Road
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Meetings are held on the first Wednesday of each month at 7:00 pm. FOOD ($5) AND SOCIALIZING (free) from 6:15 to 7:00pm. EVERYONE IS WELCOME!

Directions: The site is located on the west side of Sonoma County Airport. Take the Shiloh Road exit from Highway 101 in northern Santa Rosa. Turn left at the stop light (west) and continue to a "T" intersection. Turn left again and follow the road to the EAA sign on the left.

Members are invited to submit articles of interest. You will be notified whether or not an article will appear in the current issue.

Please email articles to: john@eaa124.org
or mail to: John Palmerlee
1209 Hexem Avenue
Santa Rosa, CA 95404

Deadline for newsletter submissions is the 20th of each month. Articles submitted after that date will be included in the newsletter at the discretion of the editor. All articles are copyrighted. To reproduce any article, please contact the editor.

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